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(56) Documents cited

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(58) Field of search

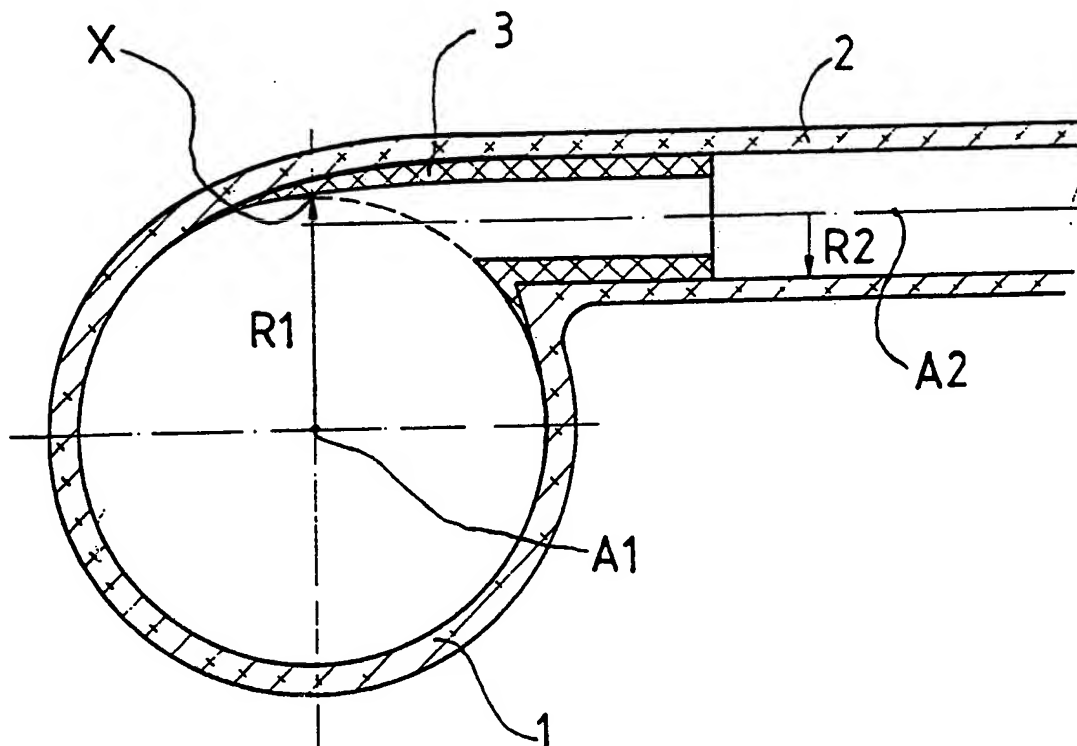
F2G

Selected US specifications from IPC sub-class

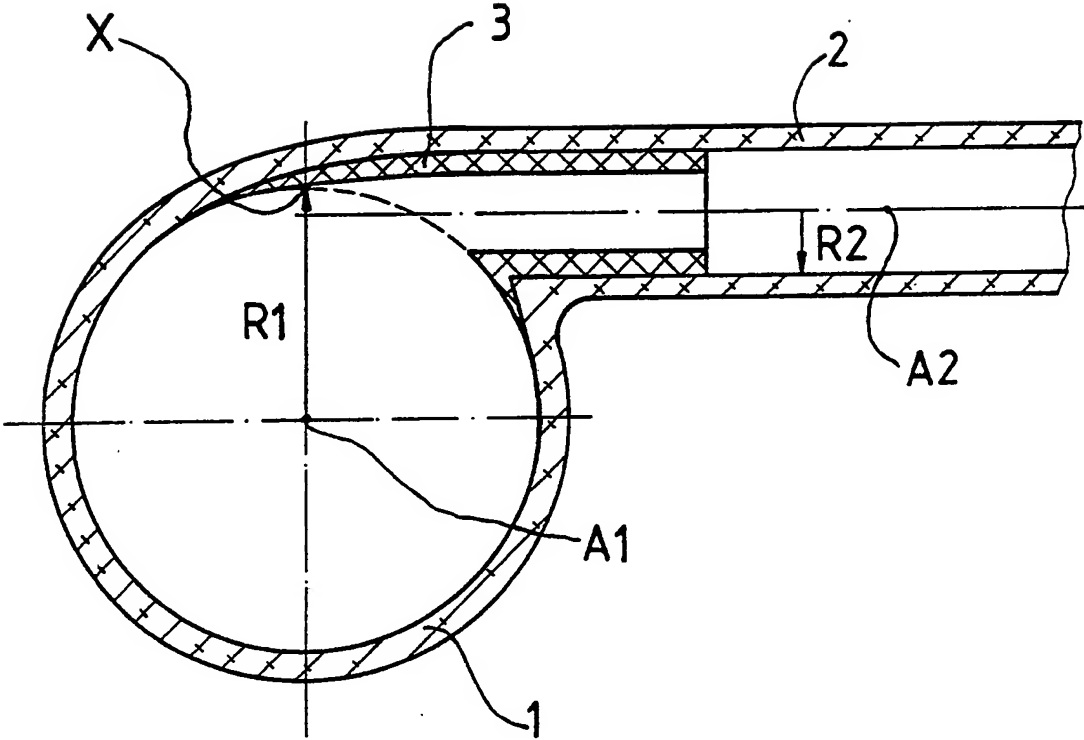
F16L

(54) **A branched hose, especially a radiator hose for a motor vehicle**

(57) A hose formed from rubber or rubber-like plastics materials which comprises a main hose and a laterally attached branch hose which is materially joined to the main hose, in which the branch hose (2) is attached to the main hose (1) to such an eccentric extent that its central axis (A2) intersects the associated radius (R1) of the inside wall of the main hose (1) in the region of its outer extremity (X), the radius (R1) extending at right angles to the central axis (A2).



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A hose, especially a radiator hose for a
motor vehicle

5 The present invention relates to a hose formed from
rubber or rubber-like plastics materials - especially
a radiator hose for a motor vehicle - which comprises
a main hose and a laterally attached branch hose which is
materially joined to the main hose. Numerous embodiments
10 of such hoses are known, their common factor being that
the branch hose in each case is attached to the main hose
centrally, that is to say, it is attached to the main
hose in such a manner that its central axis intersects
the central axis of the main hose. This T-shaped
15 arrangement with the branch hose may give rise to
installation problems if it is necessary to attach the
branch hose to the highest or lowest point of the cross-
section of the main hose because, on the one hand, it is
to serve as a vent hose or as a hose for discharging
20 sediments which settle at the bottom of the main hose
and because, on the other hand, there is no space
available either above or below the main hose for an
angular configuration of the branch hose.

25 It is an object, therefore, of the invention to
provide a hose junction so that the above-mentioned
installation problems do not arise.

30 According to the present invention there is
provided a hose formed from rubber or rubber-like
plastics materials which comprises a main hose and a
laterally attached branch hose which is materially
joined to the main hose, in which the branch hose is
attached to the main hose to such an eccentric extent
35 that its central axis intersects the associated radius
of the inside wall of the main hose in the region of

its outer extremity, the radius extending at right angles to the central axis.

5 It will thus be seen that the branch hose
therefore is attached tangentially relative to the
circumferential line of the main hose. In preferred
embodiments of the invention, the inside width of
the branch hose is, at most, half as large as the
inside width of the main hose, and the region of
10 attachment for the branch hose extends from the upper
or lower vertical point of the cross-section of the
main hose, at most over the upper or lower half of the
main hose. In addition, it may be advantageous to
provide the branching-off portion or junction region
15 with a shaped piece of plastics material or rubber which
is moulded to fit therein and spans the junction
between the two hoses, such a shaped piece being
materially joined to the inside wall both of the main
hose and of the branch hose. This shaped piece of
20 plastics material or rubber may advantageously act as
a flow throttle, due to the fact that it has a smaller
inside width than the branch hose.

25 The accompanying drawing illustrates the present
invention with reference to one embodiment.

The branch hose 2 is attached to the illustrated
main hose 1 in such a manner that its central axis A2
intersects the associated radius R1 of the inside wall
30 of the main hose 1 in the region of its outer extremity
X, the radius R1 extending at right angles to the
central axis A2. This arrangement ensures that the
branch hose is thereby attached at the highest point
of the main hose and can thus serve, for example, to
35 remove air from the main hose. In such a case, the
inside radius R2 of the branch hose 2 is clearly small

than half the inside radius R_1 of the main hose 1,
and the central axis A_2 of the branch hose 2
intersects the associated inside radius R_1 of the main
hose 1 in the region of its outer extremity X. This
point of intersection is removed from the outer
extremity X of the radius R_1 by a distance
corresponding to less than the length of the radius
 R_2 in the direction of the central axis A_1 of the
main hose.

Both for technical reasons relating to
manufacture and also in order to improve the intrinsic
properties, a shaped piece of plastics material or
rubber 3 is inserted into the branching-off region
of the illustrated hose; in the illustrated
embodiment, the shaped piece 3 has a smaller inside
width than the branch hose, so it acts as a flow throttle.

CLAIMS

1. A hose formed from rubber or rubber-like plastics materials which comprises a main hose and a laterally attached branch hose which is materially joined to the main hose, in which the branch hose is attached to the main hose to such an eccentric extent that its central axis intersects the associated radius of the inside wall of the main hose in the region of its outer extremity, the radius extending at right angles to the central axis. .
2. A hose as claimed in claim 1, wherein the length of the inside radius of the branch hose is not greater than half the length of the inside radius of the main hose.
3. A hose as claimed in claim 1 or 2, wherein the point of intersection between the central axis of the branch hose and the associated radius of the main hose is removed from the extremity of the inside radius by a distance corresponding, at most, to the length of the inside radius.
4. A hose as claimed in any of claims 1 to 3, wherein the branching-off portion contains a shaped piece of plastics material or rubber which spans the junction between the main hose and the branch hose and is materially connected to the inside wall both of the main hose and of the branch hose.
5. A hose as claimed in claim 4, wherein the shaped piece of plastics material or rubber has a smaller inside width than the branch hose.

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6. A hose formed from rubber or rubber-like plastics materials, substantially as hereinbefore described with reference to the accompanying drawing.

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